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10/721,403	11/25/2003	Patrick A. Hosein	4740-242	8049

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EXAMINER	
LOO, JUVENA W	
ART UNIT	PAPER NUMBER
2416	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,403	HOSEIN, PATRICK A.	
	Examiner	Art Unit	
	JUVENA LOO	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *13-23 and 36-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 24-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 – 7, 9 – 10, 24 – 30, and 32 - 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanda et al. (US 2004/0160922 A1) in view of Sasagawa (5,737,312).

Nanda discloses a method to control data rate of a reverse link from a mobile station in a communication system comprising the following features:

Regarding claim 1, a method of reverse link rate control at a mobile station comprising:

determining targeted queuing delays for reverse link transmit data (Nanda: see "Once a service…with the flow" in page 4, section 0025; "the MS accepts…before their deadline" in page 4, section 0026; "Conformant packets admitted…for that service (or flow)" in page 4, section 0027);

monitoring of transmit data queue sizes and ongoing reverse link throughput (Nanda: see "Once a service…with the flow" in page 4, section 0025; "the MS accepts…before their deadline" in page 4, section 0026; "Conformant packets admitted…for that service (or flow)" in page 4, section 0027; see also "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037); *and*

generating of reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Nanda discloses *wherein the reverse link throughput corresponds to a rate at which data is transferred from the mobile station to a base station* (Nanda: see "Various aspects of the invention…communication on the reverse link" in Abstract)..

However, Nanda does not explicitly disclose the feature:

wherein the ongoing link throughput corresponds to a rate at which data is successfully transferred.

Sasagawa discloses a call processor performs call set-up/release processing based upon absence/presence of valid data from an SVC service terminal comprising the feature:

wherein the ongoing link throughput corresponds to a rate at which data is successfully transferred (Sasagawa: see "A fourth object of the present invention…actual data transfer rate (traffic) from the terminal" in column 4, lines 55 – 60; see also Figures 17 – 23 and "FIG. 17 is a block diagram showing…terminates control for band decrease" in column 14, line 41 through column 17, line 62).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Nanda by using the feature, as taught by Sasagawa, in order to allow changing of the rate/bandwidth dynamically based on the value of the detected transfer rate and make it possible to utilize the rate/bandwidth effectively while avoiding congestion (Sasagawa: see column 18, lines 52 - 56).

Regarding claim 2, *wherein determining targeted queuing delays for reverse link transmit data comprises of determining a targeted queuing delay for each service instance being supported by the mobile station* (Nanda: see "the MS is…their deadline" in page 4, sections 0025, 0026, and 0027).

Regarding claim 3, *wherein monitoring transmit data queue sizes and reverse link throughput comprises monitoring a transmit data queue size and a reverse link throughput for each service instance* (Nanda: see "Once a service…with the flow" in page 4, section 0025; "the MS accepts…before their deadline" in page 4, section 0026; "Conformant packets admitted…for that service (or flow)" in page 4, section 0027; see also "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037).

Regarding claim 4, *wherein generating reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays comprises determining whether an expected queuing delay of any service instance exceeds a target queuing delay for that service instance and, if so, requesting a reverse link rate increase* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 5, *wherein generating reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted*

queuing delays comprises determining whether expected queuing delays for all service instances are below target queuing delays defined for the service instances and, if so, requesting a reverse link rate decrease (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 6, *wherein determining a targeted queuing delay for each service instance being supported by the mobile station comprises receiving service instance delay requirements from a wireless communication network supporting the mobile station* (Nanda: see "The actual resource…before their deadline" in page 4, section 0024 through section 0027; see also "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037).

Regarding claim 7, *wherein generating reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays comprises generating reverse link rate requests on an event-triggered basis by comparing expected queuing delays for each of one or more service instances to targeted queuing delays associated with those service instances* (Nanda: see "The

MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 9, *wherein generating reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays comprises generating periodic rate requests based on, in each rate control period, determining a data rate needed substantially to meet targeted queuing delays in the next rate control period for each service instance being supported by the mobile station* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "In the request…to the MS" in page 7, section 0062; "Based on…may be included" in page 8, section 0064).

Regarding claim 10, *wherein determining a data rate needed substantially to meet targeted queuing delays in the next rate control period for each service instance being supported by the mobile station comprises:*

for each service instance, computing a data rate required to meet the targeted queuing delay for that service instance in the next rate control period (Nanda: see "The BS manages…congestion T/P" in page 4, section 0025 through section 0028); *and*

calculating an aggregate data rate based on the data rates computed for the service instances being supported by the mobile station (Nanda: see "In such…QoS class" in page 4, section 0033 through page 5, section 0037).

Regarding claim 24, *a mobile station* (Nanda: see Figure 1, 102) *for use in a wireless communication network* (Nanda: see Figure 1) *comprising:*

a receiver circuit (Nanda: see Figure 2) *to receive signals transmitted by the network;*

a transmitter circuit (Nanda: see Figure 3) *to transmit signals, including rate requests, to the network; and a rate controller circuit* (Nanda: see Figure 3, 303) *configured to:*

determine targeted queuing delays for reverse link transmit data (Nanda: see "The BS manages…their deadline" in page 4, section 0025 through section 0027);

monitor transmit data queue sizes and ongoing reverse link throughput at the mobile station (Nanda: see "Once a service…with the flow" in page 4, section 0025; "the MS accepts…before their deadline" in page 4, section 0026; "Conformant packets

admitted…for that service (or flow)" in page 4, section 0027; see also "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037); *and*

generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Nanda discloses *wherein the reverse link throughput corresponds to a rate at which data is transferred from the mobile station to a base station* (Nanda: see "Various aspects of the invention…communication on the reverse link" in Abstract).

However, Nanda does not explicitly disclose the feature:

wherein the ongoing link throughput corresponds to a rate at which data is successfully transferred.

Sasagawa discloses a call processor performs call set-up/release processing based upon absence/presence of valid data from an SVC service terminal comprising the feature:

wherein the ongoing link throughput corresponds to a rate at which data is successfully transferred (Sasagawa: see "A fourth object of the present invention…actual data transfer rate (traffic) from the terminal" in column 4, lines 55 – 60; see also Figures 17 – 23 and "FIG. 17 is a block diagram showing…terminates control for band decrease" in column 14, line 41 through column 17, line 62).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Nanda by using the feature, as taught by Sasagawa, in order to allow changing of the rate/bandwidth dynamically based on the value of the detected transfer rate and make it possible to utilize the rate/bandwidth effectively while avoiding congestion (Sasagawa: see column 18, lines 52 - 56).

Regarding claim 25, *wherein the rate controller circuit is configured to determine targeted queuing delays for reverse link transmit data by determining a targeted queuing delay for each service instance being supported by the mobile station* (Nanda: see "the MS is…their deadline" in page 4, sections 0025, 0026, and 0027).

Regarding claim 26, *wherein the rate controller circuit is configured to monitor transmit data queue sizes and ongoing reverse link throughput at the mobile station by*

monitoring a transmit data queue size and an ongoing reverse link throughput for each service instance (Nanda: see "The actual resource…before their deadline" in page 4, section 0024 through section 0027; see also "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037).

Regarding claim 27, *wherein the rate controller circuit is configured to generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays by determining whether an expected queuing delay of any service instance exceeds a target queuing delay for that service instance and, if so, requesting a reverse link rate increase* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 28, *wherein the rate controller circuit is configured to generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays by determining whether expected queuing delays for all service instances are below target queuing delays defined for the service instances and, if so, requesting a reverse link rate decrease* (Nanda: see "The

MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 29, *wherein the rate controller circuit is configured to determine a targeted queuing delay for each service instance being supported by the mobile station by receiving service instance delay requirements from a wireless communication network supporting the mobile station* ((Nanda: see "Once a service…with the flow" in page 4, section 0025; "the MS accepts…before their deadline" in page 4, section 0026; "Conformant packets admitted…for that service (or flow)" in page 4, section 0027).

Regarding claim 30, *wherein the rate controller circuit is configured to generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays by generating reverse link rate requests on an event-triggered basis by comparing expected queuing delays for each of one or more service instances to targeted queuing delays associated with those service instances* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may

be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 32, *wherein the rate controller circuit is configured to generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays by generating periodic rate requests based on, in each rate control period, determining a data rate needed substantially to meet targeted queuing delays in the next rate control period for each service instance being supported by the mobile station* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "Based on…may be included" in page 8, section 0064).

Regarding claim 33, wherein the rate controller circuit is configured to determine a data rate needed substantially to meet targeted queuing delays in the next rate control period for each service instance being supported by the mobile station by:

for each service instance, computing a data rate required to meet the targeted queuing delay for that service instance in the next rate control period (Nanda: see "The BS manages…congestion T/P" in page 4, section 0025 through section 0028); and

calculating an aggregate data rate based on the data rates computed for the service instances being supported by the mobile station (Nanda: see "In such…QoS class" in page 4, section 0033 through page 5, section 0037).

3. Claims 11, 12, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanda et al. (US 2004/0160922 A1) in view of Sasagawa (5,737,312) and further in view of Toskala et al. (US 2003/0219037 A1).

Regarding claim 11, *further comprising selecting one among a set of defined data rates based on the calculated aggregate data rate* (Toskala: see "The invention… uplink rate" in page 2, section 0022), *and requesting the selected one of the defined data rates for the next rate control period* (Toskala: see "The invention… uplink rate" in page 2, section 0022);

Regarding claim 12, *wherein generating reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays comprises determining a required data rate that satisfies a targeted queuing delay for reverse link data transmissions over a given interval* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in

page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "In the request…to the MS" in page 7, section 0062; "Based on…may be included" in page 8, section 0064).

However, Nanda does not disclose the feature: *calculating an effective data rate from the required data rate that can be achieved using one or more combinations of defined data rates, and requesting the effective data rate.*

Toskala discloses the cited feature above (Toskala: see Figure 3 and "Adjusting…RR signaling" in page 4, sections 0041 and 0042; see "The invention…with an RA" in page 2, sections 0022 and 0023).

Regarding claim 34, *wherein the rate controller circuit is configured to select one among a set of defined data rates based on the calculated aggregate data rate* (Toskala: see "The invention… uplink rate" in page 2, section 0022), *and request the selected one of the defined data rates for the next rate control period* (Toskala: see "The invention… uplink rate" in page 2, section 0022).

Regarding claim 35, *wherein the rate controller circuit is configured to generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays by determining a required data rate that satisfies a targeted queuing delay for reverse link data transmissions over a given*

interval (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "In the request…to the MS" in page 7, section 0062; "Based on…may be included" in page 8, section 0064).

However, Nanda does not disclose the feature: *calculating an effective data rate from the required data rate that can be achieved using one or more combinations of defined data rates, and requesting the effective data rate.*

Toskala discloses the cited feature above (Toskala: see Figure 3 and "Adjusting…RR signaling" in page 4, sections 0041 and 0042; see "The invention…with an RA" in page 2, sections 0022 and 0023).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Nanda with Sasagawa by using the feature, as taught by Toskala, in allowing a mobile user to transmit rate information with minimum uplink code resources (Toskala: see "a fast uplink…channels" in page 1, section 0006).

5. Claims 8, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanda et al. (US 2004/0160922 A1) in view of Sasagawa (5,737,312) and further in view of Hosein (US 6,442,139 B1).

Regarding claim 8, *wherein generating reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays comprises generating reverse link rate requests on a periodic basis to control a queuing delay of the mobile station relative to a targeted queuing delay* (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "In the request…to the MS" in page 7, section 0062; "Based on…may be included" in page 8, section 0064).

However, Nanda does not disclose the feature: *the use of an average queuing delay*.

Hosein discloses a novel system for regulating traffic in a communications network comprising the cited feature above (Hosein: see "the average queuing delay…not changed" in column 5, lines 35 - 54).

Regarding claim 31*, wherein the rate controller circuit is configured to generate reverse link rate requests based on the transmit data queue sizes, the ongoing reverse link throughput, and the targeted queuing delays by generating reverse link rate*

requests on a periodic basis to control an queuing delay of the mobile station relative to a targeted queuing delay (Nanda: see "The MS determines…packets decreases" in page 4, section 0028; "The MS communicates…to the BS" in page 4, section 0029; "Let us assume…the MS queue" in page 5, sections 0034 through sections 0037; "Let us assume…QoS class" in page 5, sections 0034, 0035, 0036, and 0037; "At time…may be used" in page 7, section 0048 through section 0056; "In the request…to the MS" in page 7, section 0062; "Based on…may be included" in page 8, section 0064).

However, Nanda does not disclose the feature: *the use of an average queuing delay*.

Hosein discloses a novel system for regulating traffic in a communications network comprising the cited feature above (Hosein: see "the average queuing delay…not changed" in column 5, lines 35 - 54).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Nanda with Sasagawa by using the feature, as taught by Hosein, in reducing congestion in the network (Hosein: see "Once the...network" in column 2, line 67 through column 3, line 4).

Response to Arguments

5. Applicant's arguments with respect to claims 1 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUVENA LOO whose telephone number is (571)270-1974. The examiner can normally be reached on Monday - Friday: 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUVENA LOO/
Examiner
Art Unit 2416
November 19, 2008

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2416